

## SEQUENCE LISTING

&lt;110&gt; SIBBESEN, OLE

SORENSEN, JENS FRISBAEK

&lt;120&gt; PROTEINS

&lt;130&gt; 078883/0132

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&lt;210&gt; 1

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (17)

&lt;223&gt; Any Amino Acid

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (43)

&lt;223&gt; Any Amino Acid

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (49)

&lt;223&gt; Any Amino Acid

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

&lt;400&gt; 1

Leu Ala Val Val Ala Arg Ala Val Lys Asp Val Ala Pro Phe Gly Val  
1 5 10 15Xaa Tyr Asp Thr Lys Thr Leu Gly Asn Asn Leu Gly Gly Tyr Ala Val  
20 25 30

Pro Asn Gln Leu Gly Leu Leu Asp Gly Gly Xaa Asp Trp Thr Met Ile  
35 40 45

Xaa Lys Asn Ser Met Val Asp Val Lys  
50 55

<210> 2  
<211> 38  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> MOD\_RES  
<222> (26)  
<223> Any Amino Acid

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Any Amino Acid

<220>  
<221> MOD\_RES  
<222> (34)  
<223> Any Amino Acid

<220>  
<221> MOD\_RES  
<222> (38)  
<223> Any Amino Acid

<220>  
<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

<400> 2  
Gly Pro Pro Leu Ala Pro Val Thr Glu Ala Pro Ala Thr Ser Leu Tyr  
1 5 10 15

Thr Ile Pro Phe His His Gly Ala Ala Xaa Val Leu Asp Val Xaa Ser  
20 25 30

Ser Xaa Leu Leu Trp Xaa  
35

<210> 3  
<211> 213  
<212> PRT  
<213> Unknown Organism

<220>  
<223> Description of Unknown Organism: Xylanase

&lt;400&gt; 3

Met Phe Lys Phe Lys Lys Phe Leu Val Gly Leu Thr Ala Ala Phe  
 1 5 10 15

Met Ser Ile Ser Met Phe Ser Ala Thr Ala Ser Ala Ala Gly Thr Asp  
 20 25 30

Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn  
 35 40 45

Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe  
 50 55 60

Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn  
 65 70 75 80

Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu  
 85 90 95

Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser  
 100 105 110

Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser  
 115 120 125

Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Arg Tyr Asn Ala Pro  
 130 135 140

Ser Ile Asp Gly Asp Asn Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg  
 145 150 155 160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Ala Ile Thr Phe Ser Asn  
 165 170 175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp  
 180 185 190

Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Lys Ser Ser Gly Ser Ser  
 195 200 205

Asn Val Thr Val Trp  
 210

&lt;210&gt; 4

&lt;211&gt; 642

&lt;212&gt; DNA

&lt;213&gt; Unknown Organism

&lt;220&gt;

&lt;223&gt; Description of Unknown Organism: Xylanase

&lt;400&gt; 4

atgtttaagt ttaaaaagaa attcttagtt ggattaacgg cagcttcat gagtatcagc 60  
 atgtttcggtt caaccgcctc tgccatggc acagattact ggcaaaattg gactgacggg 120  
 ggcgggacag taaacgcagt caatggctct ggccggaaattt acagtgttaa ttgttctaatt 180  
 accgggaattt tcgttgttgg taaaggctgg actacaggct cgccatttag aacaataaac 240  
 tataatgccgtt gttttgggc gcccgtttagt aatggatatt taactttataa tggctggacg 300

agatcgcccc tcatcgataa ttatgtggtg gattcatggg gtacttacag acctaccgga 360  
 acgtataaaag gtaccgtaaa gagtgatgga ggtacatatg acatataac aacgacacgt 420  
 tataacgcac cttccattga tggcataac actacttta cgcaactgt gagtgtccgc 480  
 cagtcgaaga gaccgaccgg aagcaacgct gcaatcactt tcagcaatca tgttaacgca 540  
 tggaaagagcc atggaatgaa tctgggcagt aattgggctt atcaagtctt agcgacagaa 600  
 ggatataaaa gcagcggaaag ttctaatgta acagtgtggt aa 642

<210> 5  
 <211> 213  
 <212> PRT  
 <213> Bacillus subtilis

<400> 5  
 Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu  
 1 5 10 15  
 Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp  
 20 25 30  
 Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Ile Val Asn Ala Val Asn  
 35 40 45  
 Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe  
 50 55 60  
 Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn  
 65 70 75 80  
 Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu  
 85 90 95  
 Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser  
 100 105 110  
 Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser  
 115 120 125  
 Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Arg Tyr Asn Ala Pro  
 130 135 140  
 Ser Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg  
 145 150 155 160  
 Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn  
 165 170 175  
 His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp  
 180 185 190  
 Ala Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser  
 195 200 205  
 Asn Val Thr Val Trp  
 210

<210> 6  
<211> 642  
<212> DNA  
<213> *Bacillus subtilis*

<400> 6  
atgtttaagt ttaaaaagaa tttcttagtt ggattatcg<sup>g</sup> cagtttaat gagtattagc 60  
ttgtttcg<sup>g</sup> caaccgc<sup>c</sup> tgcagctagc acagactact ggcaaaattg gactgatggg 120  
ggcggtata<sup>g</sup> taaacgctgt caatgggtct ggccggatt acagtgtta<sup>a</sup> ttggtcta<sup>a</sup>t 180  
accggaaatt ttgttgttgg taaagg<sup>t</sup>ttgg actacagg<sup>t</sup> cgccatttag gacgataaac 240  
tataatgc<sup>c</sup> gagtttggc gcccgaatggc aatggatatt taacttata tgg<sup>t</sup>tgacg 300  
agatcac<sup>c</sup>tc tcatagaata ttatgttagt<sup>g</sup> gattcatgg<sup>g</sup> gtacttata<sup>g</sup> acctactgga 360  
acgtataa<sup>g</sup> gtactgtaaa aagtgtatgg<sup>g</sup> ggtacatatg acatata<sup>a</sup> aactacacgt 420  
tataacgcac cttccattga tggcgatgc<sup>c</sup> actacttta cg<sup>c</sup>actg<sup>t</sup>gactg gagtgttcgc 480  
cagtcgaaga<sup>g</sup> gaccaaccgg<sup>g</sup> aagcaacg<sup>c</sup> acaatca<sup>c</sup>tc tagcaatca t<sup>t</sup>gtgaacgca 540  
t<sup>t</sup>ggaagaggc atggaatgaa tctgggc<sup>c</sup>act aattgggc<sup>t</sup> accaagtcat<sup>g</sup> ggcgacagaa 600  
ggatataaaa<sup>g</sup> gtagtggaa<sup>g</sup> ttcttaacgta acagtgtgg<sup>t</sup> aa 642

<210> 7  
<211> 213  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Mutant Xylanase

<400> 7  
Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu  
1 5 10 15  
Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp  
20 25 30  
Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn  
35 40 45  
Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe  
50 55 60  
Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn  
65 70 75 80  
Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu  
85 90 95  
Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser  
100 105 110  
Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser  
115 120 125  
Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Arg Tyr Asn Ala Pro  
130 135 140  
Ser Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg  
145 150 155 160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Ala Ile Thr Phe Ser Asn  
 165 170 175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp  
 180 185 190

Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Lys Ser Ser Gly Ser Ser  
 195 200 205

Asn Val Thr Val Trp  
 210

<210> 8

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 Mutant Xylanase

<400> 8

atgtttaagt taaaaagaa tttcttagtt ggattatcg cagcttaat gagtattagc 60  
 ttgtttcgg caaccgcctc tgcagctac acagactact ggcaaaattg gactgatggg 120  
 ggcgggtaccc taaacgctgt caatgggtct ggcgggaatt acagtgttaa ttgttctaatt 180  
 accggaaatt ttgttgttgg taaagggttgg actacagggtt cgccatttag gacgataaac 240  
 tataatgcgg gagtttggc gccgaatggc aatggatatt taacttata tggttggacg 300  
 agatcaccc tcataagaata ttatgtatgtt gattcatggg gtacttataatg acctactgg 360  
 acgtataaag gtactgtaaa aagtgtatggg ggtacatatg acatataatac aactacacgt 420  
 tataacgcac cttccattga tggcgatcgc actacttttca cgccgtactg gagtgttcgc 480  
 cagtcgaaga gaccaaccgg aagcaacgct gctatcaactt tcagcaatca tgtaaacgca 540  
 tggaaagagcc atgaaatgaa tctgggcagt aattgggctt accaagtccct cgcgacagaa 600  
 ggatataaaa gttccggaaag ttctaacgta acagtgttgtt aa 642

<210> 9

<211> 213

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 Mutant Xylanase

<400> 9

Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu  
 1 5 10 15

Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp  
 20 25 30

Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn  
 35 40 45

Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe  
 50 55 60

Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn  
 65 70 75 80  
 Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu  
 85 90 95  
 Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser  
 100 105 110  
 Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser  
 115 120 125  
 Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Arg Tyr Asn Ala Pro  
 130 135 140  
 Ser Ile Asp Gly Asp Asn Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg  
 145 150 155 160  
 Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Ala Ile Thr Phe Ser Asn  
 165 170 175  
 His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp  
 180 185 190  
 Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Lys Ser Ser Gly Ser Ser  
 195 200 205  
 Asn Val Thr Val Trp  
 210

<210> 10  
 <211> 642  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 Mutant Xylanase

<400> 10  
 atgtttaagt taaaaaaagaa tttcttagtt ggattatcg<sup>g</sup> cagcttaat gagtattagc 60  
 ttgttttcgg caaccgcctc tg<sup>c</sup>agcttagc acagactact ggcaaaattg gactgtatggg 120  
 ggcggtaaccg taaacgctgt caatgggtct ggccggaaatt acagtgttaa ttggtctaatt 180  
 accggaaatt ttgttgttgg taaagggttg actacagg<sup>t</sup>tt cgccatttag gacgataaac 240  
 tataatgccg gagtttggc gccc<sup>a</sup>atggc aatggatatt taactttata tgg<sup>t</sup>ggacg 300  
 agatcacctc tcatagaata ttatgtatgg gattcatggg gtacttatag acctactgga 360  
 acgtataaaag gtactgtaaa aagt<sup>t</sup>gatggg ggtacatatg acatataac aactacacgt 420  
 tataacgcac ctteccattga tggcgataat actactttt<sup>a</sup> cg<sup>c</sup>actactg g<sup>g</sup>atgttcgc 480  
 cagtcgaaga gaccaaccgg aagcaacg<sup>t</sup>ct gctatcactt tcagcaatca t<sup>t</sup>gtgaacgca 540  
 tgg<sup>a</sup>agagcc atggaatgaa tctgggcagt aattgggc<sup>t</sup>tt accaagtctt cgcgacagaa 600  
 ggatataaaa gttccggaaag ttcttaacgta acagtgtgg<sup>t</sup> aa 642

<210> 11  
 <211> 213

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Mutant Xylanase

&lt;400&gt; 11

Met	Phe	Lys	Phe	Lys	Lys	Asn	Phe	Leu	Val	Gly	Leu	Ser	Ala	Ala	Leu
1															15

Met	Ser	Ile	Ser	Leu	Phe	Ser	Ala	Thr	Ala	Ser	Ala	Ala	Ser	Thr	Asp
															30
20								25							

Tyr	Trp	Gln	Asn	Trp	Thr	Asp	Gly	Gly	Gly	Thr	Val	Asn	Ala	Val	Asn
															45
35					40										

Gly	Ser	Gly	Gly	Asn	Tyr	Ser	Val	Asn	Trp	Ser	Asn	Thr	Gly	Asn	Phe
															50
							55								60

Val	Val	Gly	Lys	Gly	Trp	Thr	Thr	Gly	Ser	Pro	Phe	Arg	Thr	Ile	Asn
															80
65					70				75						

Tyr	Asn	Ala	Gly	Val	Trp	Ala	Pro	Asn	Gly	Asn	Gly	Tyr	Leu	Thr	Leu
															95
85								90							

Tyr	Gly	Trp	Thr	Arg	Ser	Pro	Leu	Ile	Glu	Tyr	Tyr	Val	Val	Asp	Ser
															110
							100		105						

Trp	Gly	Thr	Tyr	Arg	Pro	Thr	Gly	Thr	Tyr	Lys	Gly	Thr	Val	Lys	Ser
															115
							115		120						125

Asp	Gly	Gly	Thr	Tyr	Asp	Ile	Tyr	Thr	Thr	Arg	Tyr	Asn	Ala	Pro	
130						135				140					

Ser	Ile	Asp	Gly	Asp	Asn	Thr	Thr	Phe	Thr	Gln	Tyr	Trp	Ser	Val	Arg
															145
							145		150						160

Gln	Ser	Lys	Arg	Pro	Thr	Gly	Ser	Asn	Ala	Thr	Ile	Thr	Phe	Ser	Asn
															165
							165		170						175

His	Val	Asn	Ala	Trp	Lys	Ser	His	Gly	Met	Asn	Leu	Gly	Ser	Asn	Trp
															180
							180		185						190

Ala	Tyr	Gln	Val	Met	Ala	Thr	Glu	Gly	Tyr	Gln	Ser	Ser	Gly	Ser	Ser
															195
							195		200						205

Asn	Val	Thr	Val	Trp
				210

&lt;210&gt; 12

&lt;211&gt; 642

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Mutant Xylanase

&lt;400&gt; 12

atgtttaagt taaaaagaa tttcttagtt ggattatcg cagcttaat gagtattagc 60  
 ttgtttcg caaccgcctc tgcagctac acagactact ggc当地atgg gactgatggg 120  
 ggc当地taccc taaacgctgt caatgggtct ggc当地gaatt acagtgtta ttgttcaat 180  
 accggaaatt ttgttggg taaagggttg actacagggtt cgccatttag gacgataaac 240  
 tataatgcgg gagtttggc gccgaatggc aatggatatt taacttata tggggacg 300  
 agatcaccc tcataagaata ttatgttagt gattcatggg gtacttatac acctactgga 360  
 acgtataaag gtactgtaaa aagtgtatggg ggtacatatg acatataac aactacacgt 420  
 tataacgcac cttccattga tggcgataat actacttta cgcaatctg gagggttcgc 480  
 cagtcgaaga gaccaaccgg aagcaacgct acaatcactt tcagcaatca tggaaacgca 540  
 tggaaagagcc atggaaatgaa tctgggcagt aattgggctt accaagtcat ggc当地acagaa 600  
 ggtatcaaa gtagtggaaag ttctaacgta acagtgtggaa aa 642

&lt;210&gt; 13

&lt;211&gt; 35

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

&lt;400&gt; 13

Gly	Ala	Pro	Val	Ala	Arg	Ala	Val	Glu	Ala	Val	Ala	Pro	Phe	Gly	Val
1															15

Cys	Tyr	Asp	Thr	Lys	Thr	Leu	Gly	Asn	Asn	Leu	Gly	Gly	Tyr	Ala	Val
														20	30

Pro Asn Val

35

&lt;210&gt; 14

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

&lt;400&gt; 14

Lys	Arg	Leu	Gly	Phe	Ser	Arg	Leu	Pro	His	Phe	Thr	Gly	Cys	Gly	Gly
1															15

Leu

&lt;210&gt; 15

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

&lt;400&gt; 15

Leu Pro Val Pro Ala Pro Val Thr Lys Asp Pro Ala Thr Ser Leu Tyr  
1 5 10 15

Thr Ile Pro Phe His

20

&lt;210&gt; 16

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

&lt;400&gt; 16

Leu Leu Ala Ser Leu Pro Arg Gly Ser Thr Gly Val Ala Gly Leu Ala  
1 5 10 15

Asn Ser Gly Leu Ala Leu Pro Ala Gln Val Ala Ser Ala Gln Lys

20

25

30

&lt;210&gt; 17

&lt;211&gt; 24

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

&lt;400&gt; 17

Gly Gly Ser Pro Ala His Tyr Ile Ser Ala Arg Phe Ile Glu Val Gly  
1 5 10 15

Asp Thr Arg Val Pro Ser Val Glu

20

&lt;210&gt; 18

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

<400> 18  
Val Asn Val Gly Val Leu Ala Ala Cys Ala Pro Ser Lys  
1 5 10

<210> 19  
<211> 41  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Xylanase Inhibitor

<400> 19  
Val Ala Asn Arg Phe Leu Leu Cys Leu Pro Thr Gly Gly Pro Gly Val  
1 5 10 15  
  
Ala Ile Phe Gly Gly Pro Val Pro Trp Pro Gln Phe Thr Gln Ser  
20 25 30  
  
Met Pro Tyr Thr Leu Val Val Val Lys  
35 40